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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,129	09/22/2003	Osamu Munekata	1051	8406
27649	7590	03/29/2007	EXAMINER	
MICHAEL TOBIAS #40 1717 K ST. NW, SUITE 613 WASHINGTON, DC 20036			IP, SIKYIN	
			ART UNIT	PAPER NUMBER
			1742	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/29/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/666,129	MUNEKATA ET AL.	
	Examiner	Art Unit	
	Sikyin Ip	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 22 November 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 13-19 and 32-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 13-19 and 32-36 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 10/175,149.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date. _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION**Claim Rejections - 35 USC § 103**

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 13-16 are rejected under 35 U.S.C. 103(a) as obvious over JP08001373.

JP08001373 discloses Pb-free Sn based solder alloy overlapped claimed Sn based solder composition (abstract). Forming the solders of cited references into a solder paste is contemplated within ambit of ordinary skill artisan. Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the subject matter disclosed by the reference. Overlapping ranges have been held to be a *prima facie* case of obviousness. See *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). An obviousness rejection based on similarity in chemical structure

and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties. *In re Gyurik*, 596 F.2d 1012, 1018, 201 USPQ 552, 557 (CCPA 1979); See *In re May*, 574 F.2d 1082, 1094, 197 USPQ 601, 611 (CCPA 1978) and *In re Hoch*, 57 CCPA 1292, 1296, 428 F.2d 1341, 1344, 166 USPQ 406, 409 (1970).

With respect to instant claim 13, the Ni content of JP '373 is 0.2 wt.% higher than the claimed Ni content (greater than 0 and at most 0.3 wt.%). It is noted that the Ni content in new claim 34 is overlapped by JP '373. But, it is well settled that a prima facie case of obviousness would exist where the claimed ranges and prior art do not overlap but are close enough that one ordinary skilled in the art would have expected them to have the same properties, *In re Titanium Metals Corporation of America v. Banner*, 227 USPQ 773 (Fed. Cir. 1985), *In re Woodruff*, 16 USPQ 2d 1934, *In re Hoch*, 428 F.2d 1341, 166 USPQ 406 (CCPA 1970), and *In re Payne* 606 F.2d 303, 203 USPQ 245 (CCPA 1979). To overcome the prima facie case, an applicant must show that there are substantial, actual differences between the properties of the claimed compound and the prior art compound. *In re Hoch*, 428 F.2d 1343-44, 166 USPQ 406 at 409. The same reason is also applied to the P content in claim 15.

Claims 17-19 and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08001373 as applied to claims 12-16 above, and further in view of USP 4858816 to Gontier.

The claimed subject matter as is disclosed and rejected above by the Sato or JP 08001373 except for the using Sn based solder in wave soldering. However, Gontier in

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col. 2, lines 10-31 discloses tin wave soldering is known in the same field of endeavor or the analogous metallurgical art. It has been held a use of new material (here the solders are known) in old patented process is not invention since process is merely being used with analogous material in same art for which process was developed, In re LaVerne, et al., 108 USPQ 335. Therefore, it would have been prima facie obvious for ordinary skill artisan motivated by a reasonable expectation of success to wave soldering with conventional Sn based solder alloy in order to obtain all of the known benefits.

Response to Arguments

Applicant's arguments filed November 22, 2006have been fully considered but they are not persuasive.

Claim 13 recites a lead-free solder alloy containing a nonzero Ni content of at most 0.3 wt %. Nagai does not disclose or suggest Applicants argue that "such a composition." But, new

34. (new) A soldering method comprising forming a bath of a molten lead-free solder alloy consisting of 0.1 - 3 wt% of Cu, claim 34 recites "0.001 - 0.1 wt% of P, greater than 0 and at most 0.5 wt% of Ni, . ." Moreover, it is well settled that a prima facie case of obviousness would exist where the claimed ranges and prior art do not overlap but are close enough that one ordinary skilled in the art would have expected them to have the same properties, In re Titanium Metals Corporation of America v. Banner, 227 USPQ 773 (Fed. Cir. 1985), In re Woodruff, 16 USPQ 2d 1934, In re Hoch, 428 F.2d 1341, 166 USPQ 406 (CCPA 1970), and In re Payne 606 F.2d 303, 203 USPQ 245 (CCPA 1979). To overcome the prima facie case,

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an applicant must show that there are substantial, actual differences between the properties of the claimed compound and the prior art compound. In re Hoch, 428 F.2d 1343-44, 166 USPQ 406 at 409.

Applicants' argument with respect to P content in instant claim 15 is noted. The same response set forth in paragraph immediately above is reiterated.

Therefore, Nagai clearly prohibits a P content of less than 0.05
t and so provides no suggestion of a P content as set forth in

Applicants argue that "claim 15." But, that does not mean instant claimed 0.01 wt.% of P in claim 15 would have different properties of 0.1 wt.% P in instant claim 13.

Applicants' argument with respect to the flux in Nagai and argument in page 10 of instant remarks is noted. But, solder of Nagai is formed as powder which is known for paste. And the solder can also be applied to materials other than stainless steel.

[0010] Although contained about 65% or more as a base component of this invention, it forms a fluid good brazing-material alloy by combining with Cu or Ag while it suppresses a fusing point low, and combines with P and nickel and demonstrates autogenous welding nature, even if Sn alloys the above-mentioned addition ingredient from the lowness of the fusing point of Sn itself. Sn machine low-melt point point brazing material of this invention is possible also for being able to fabricate and use it for the form of the powder by the usual gas atomizing method etc., a foil, a line, etc., and applying to brazing of base materials other than stainless steel, and useful.

Applicants' argument with respect to Gontier is noted. But, Gontier is merely cited to use Sn alloy solder for wave soldering is known in the art of cited references.

Applicants' argument in pages 9-10 of instant remarks with respect to brazing temperature is noted. But, Nagai also teaches fusing point as low as 232 °C.

[Means for Solving the Problem]

[0005] This invention persons are 500-600-degree C low temperature about the stainless steel which forms a firm oxide film in the surface. The result which has advanced investigation of various base components and an addition ingredient in order that it can braze without using flux, and wettability may find good brazing-material alloy composition, As a base component, a fusing point in a practical use metal It is as the lowest as 232 degrees C, and a vapor pressure is also comparatively low.

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The above rejection relies on the reference(s) for all the teachings expressed in the text(s) of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the text(s) of the reference(s). To emphasize certain aspect(s) of the prior art, only specific portion(s) of the text(s) have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combination of the cited references may be relied on in future rejection(s) in view of amendment(s).

All recited limitations in the instant claims have been met by the rejections as set forth above.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121; 37 C.F.R. Part §41.37 (c)(1)(v); MPEP §714.02; and MPEP §2411.01(B).

Examiner Correspondence

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S
SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip
March 27, 2007